working up to six months duration. Construction equipment would be confined to working in Los Alamos Canyon and not interfere with traffic on SR 4 or SR 502. The existing unpaved access road into Los Alamos Canyon may require some grading to enhance its functioning as a fire and maintenance road once the gas line project was completed.

3.2.13.3 No Action Alternative

Under this alternative, the existing gas transmission line buried under SR 502 would not be abandoned and implementing the No Action Alternative would result in the existing gas line continuing to be used. SR 502 could be damaged and possibly closed to traffic for an indeterminate length of time in the event of a gas line failure. Loss of the use of SR 502 to access the Los Alamos town site would cause all traffic coming into and out of Los Alamos and LANL to divert to SR 4, East Jemez Road, or Pajarito Road. If NNSA restricted traffic along East Jemez or Pajarito Roads then traffic would encounter a considerable diversion in miles and time traveling past White Rock and Bandelier National Monument. There would be more congestion along West Jemez Road especially through TA-3 and at the Diamond Drive and Jemez Road intersection and northbound across the Los Alamos Canyon bridge during peak commute periods. These delays would present safety problems of various magnitudes during emergencies.

4.0 ACCIDENT ANALYSIS

The Proposed Action of constructing approximately 3 mi (5 km) of new 12-in. (30-cm) natural gas transmission line from the White Rock intersection to Los Alamos Canyon consists of activities that are performed on a routine basis in utility line installation and, thus, are a common practice in this standardized public utility industry. Therefore, specialized accident types that are considered at DOE nuclear facilities are not a consideration. The most serious potential accident considered for the Proposed Action would be a fatality during installation of the transmission line. The activities are considered a form of construction and, so, potential fatalities can be considered by comparing national statistics on construction with project worker information for the Proposed Action. No fatalities are likely to result from the proposed construction.

The estimated number of workers was compared to recent risk rates of occupational fatalities for construction. Up to 30 full-time workers could be employed, working up to 12 hours per day and up to 7 days per week for about a 6-month duration. This equates to about 110 percent of a normal work year. The average fatality rate in the U.S. for industries that include causes of falls, exposure to harmful substances, fires and explosions, and being struck by objects, equipment, or projectiles is 1.9 per 100,000 workers per year (Saltzman 2001). No deaths (0.00062) from these causes are expected from implementing the Proposed Action.

Transportation activities are expected to include the transport of materials (such as pipes and welding materials) to the site and waste and debris away from the site. Of the different types of transportation occupations nationwide, truck drivers of all types of trucks experience the highest fatality rate (26 deaths per 100,000 full-time workers per year) (Saltzman 2001). The transportation activities for the Proposed Action are expected to constitute a minor fraction of the amount of travel on which transportation fatality rates for industry are based. No statistics were found for trucks hauling materials on special roads such as the pipeline access road; however, the

long distances and higher speeds that are included in the national statistics would be uncommon in this project and the number of driver-years would be very low, therefore no transportation fatalities are expected for this project.

The nonfatal occupational injury and illness rate in the U.S. for the occupational category including public utilities is 8.7 per 100 workers per year. At this rate and assuming the worker statistics previously mentioned for the Proposed Action, about three nonfatal injuries/illnesses can be expected for the project.

5.0 CUMULATIVE EFFECTS

Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes them. These effects can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7).

This section considers the Proposed Action and possible effects on resources in context to any ongoing or reasonably foreseeable future actions. The cumulative effects on resources are discussed further in this section. This analysis concludes that there could be cumulative effects on land use, transportation, infrastructure, visual, noise, health effects, cultural resources, water quality, air quality, and PRSs or other aspects of the environment.

5.1 Activities in the Vicinity of the Proposed Gas Pipeline Easement

5.1.1 Conveyance and Transfer

A portion of the proposed easement of the 12-in. (30-cm) gas pipeline is located within the White Rock Y Tract identified in the Record of Decision for the *Conveyance and Transfer of Certain Lands Administered by the Department of Energy and Located at Los Alamos National Laboratory, Los Alamos and Santa Fe Counties, New Mexico* (DOE 1999b). It is anticipated that these lands would be used for either cultural preservation were they to be transferred to San Ildefonso Pueblo; or kept as natural areas or used for transportation and utility improvements were they to be transferred to Los Alamos County. Consequently, there could be other future construction or operational activities that would contribute to cumulative effects on land use, transportation, infrastructure, visual, noise, health effects, water quality, air quality, and PRSs in Los Alamos Canyon or adjacent areas if DOE modified its original Record of Decision to allow the transfer or conveyance of this land tract.

5.1.2 Advanced Hydrotest Facility

The conceptualized AHF would be the next generation hydrodynamic test facility following the Dual-Axis Radiographic Hydrodynamic Test Facility at LANL. AHF would be an improved radiographic facility that would provide for imaging on more than two axes, each with multiple time frames, though the number of axes and time frames needed for such imaging is still subject to requirements definition and design evolution. The facility would be used to better reveal the evolution of weapon primary implosion symmetry and boost-cavity shape under normal conditions and in accident scenarios (DOE 1996).